

(27) a) $[HCl] = 0.03M$; $HCl \rightarrow H^+ + Cl^-$; $[H^+] = 0.03$; $pH = 1.5$
 $[NaOH] = 0.05M$; $NaOH \rightarrow Na^+ + OH^-$; $[OH^-] = 0.05$, $pOH = 1.3 \rightarrow pH = 12.7$

b) $[HCl] = 0.03M$

$V_D = 50 mL$

$n \cdot H^+ = 0.03 \cdot 0.05 = 0.0015 \text{ mols}$

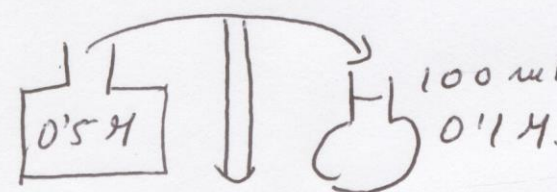
$[NaOH] = 0.05M$

$V_D = 50 mL$

$n \cdot OH^- = 0.03 \cdot 0.05 = 0.0025 \text{ mols}$

Se neutralizan 0.0015 mols, Sobran $\Rightarrow 0.0010 \text{ mols } OH^-$

$[OH^-] = \frac{0.0010}{0.110} = 0.010M$; $pOH = 2$; $pH = 12$.

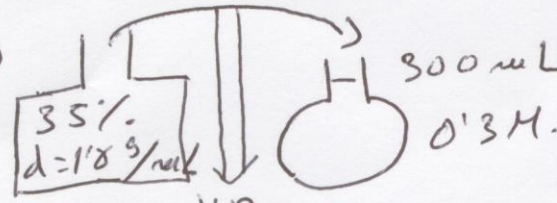
(29) a)  $n_S = 0.1 \cdot 0.1 = 0.01 \text{ mols } NaOH$
 $0.5 = \frac{0.01}{V_D}$; $V_D = \frac{0.01}{0.5} = 0.02L = 20 mL$

$\hat{=} V_D?$

Habría que tomar 20mL de la disolución concentrada, ponerla en un matraz aforado de 100mL y añadir H_2O hasta el ensarse.

b) Neutralización: $n \cdot H^+ = n \cdot OH^- \Rightarrow V_a \cdot N_a = V_b \cdot N_b$

$V_a \cdot 0.5 = 100 \cdot 0.1$; $V_a = \frac{100 \cdot 0.1}{0.5} = 20 mL$

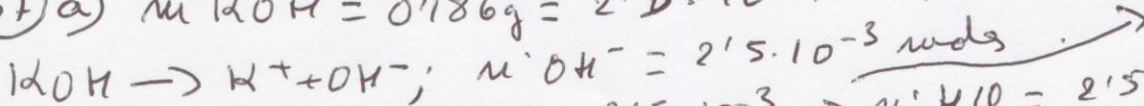
(35) a)  $n_S = 0.3 \cdot 0.3 = 0.09 \text{ mols}$
 $0.09 \text{ mols } HCl \cdot \frac{36.5g}{1 \text{ mol}} \cdot \frac{100gD}{35gS} \cdot \frac{1 mL D}{1.18gD} = 7.95 mL = V_D$

$\hat{=} V_D?$

b) Neutralización: $V_a \cdot N_a = V_b \cdot N_b$

$0.3 \cdot 100 = V_b \cdot 0.2$; $V_b = 150 mL$

(37) a) $m KOH = 0.186g = 2.5 \cdot 10^{-3} \text{ mols}$

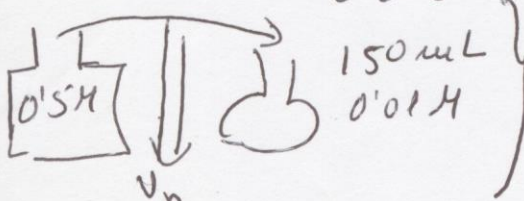


Neutralización $\Rightarrow n \cdot H^+ = 2.5 \cdot 10^{-3} \Rightarrow n \cdot HCl = 2.5 \cdot 10^{-3} \text{ mols}$

$[HCl] = \frac{2.5 \cdot 10^{-3}}{0.04} = 0.06M$

b) $[KOH] = \frac{2.5 \cdot 10^{-3}}{0.005} = 0.5M$

$n_S = 0.01 \cdot 0.15 = 0.0015 \text{ mols}$

 V_D

$0.5M = \frac{0.0015}{V_D}$; $V_D = 0.003L = 3 mL$